REMARKS

The present invention relates to an inline process for controlling and monitoring a nitration process. In this process, the composition of the acid phase from a nitration reaction mixture is determined spectrometrically. The data from this determination is then relayed to a process control system in order to monitor and control the production process.

Claims 1-24 stand rejected under 35 U.S.C. §103(a) as being obvious over Meeuwssen et al (U.S. 2004/0249512 A1). Applicants respectfully traverse this rejection.

Meeuwssen et al discloses a method for controlling a process for separating mixtures containing several substances. In the disclosed method, an analytical device is placed between two distillation columns in which the substances present in the mixture being treated are separated. While this analytical device does make it possible to maintain constant concentration of the product, i.e., p-nitrotoluene, between the two columns, it does not ensure that the concentration of the end product removed from the bottom of the second distillation column remains constant due to the constant changes between the point at which the analytical device is positioned and the bottom of the second column. (See paragraph [0008].) This problem is resolved by coupling the online analytical instrument with an online, predictive process model. (See paragraph [0025].)

The Meeuwssen et al method is distinguishable from Applicants' claimed invention in significant respects.

First, Meeuwssen et al analyze the product mixture with the goal of predicting the amount of desired product that will be recovered after separation by distillation. In contrast, Applicants' claimed process measures the nitric acid content of the acid phase (i.e., the amount of unused reactant is determined) with the goal of replacing the amount of spent nitric acid before the acid phase is recycled to the nitration reactor. (See, e.g., page 4, lines 8-11 of the specification.) That is, Meeuwssen et al measures the desired product whereas Applicants' process measures the amount of unused reactant.

Second, in the Meeuwssen et al method it is the number of theoretical plates of structured packings in the distillation column which is adapted to control the reference separation process. In contrast, Applicants' claimed invention controls the nitration process by replenishing the amount of nitric acid in the nitrating acid mixture before that nitrating reaction mixture is recycled back to the nitration reactor. That is, the parameters for controlling the Meeuwssen et al process and Applicants' process are completely different.

In short, Meeuwssen et al is directed to a completely different type of process than that which is being claimed by Applicants. Further, the process parameters controlled in each of these processes are completely different.

One skilled in the art seeking to develop a method for controlling a nitration process of the type being claimed by Applicants would not therefore be "guided" to Applicants' claimed invention by the teachings of Meeuwssen et al with respect to isomer separation.

Applicants' invention is not therefore rendered obvious by the teachings of Meeuwssen et al.

Withdrawal of this rejection is therefore requested.

In view of the above amendments and remarks, reconsideration and allowance of Claims 1-24 are respectfully requested.

Respectfully submitted,

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